

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (original) A method of demagnetizing magnetic media for recording data in a data storage device, comprising the steps of:
 - (a) placing the magnetic media in a magnetic field at a first strength level; and
 - (b) gradually reducing the magnetic field to a second strength level to
5 essentially eliminate net magnetization in the magnetic media.
2. (original) The method of claim 1, wherein step (b) further includes the steps of reducing the magnetic field by multiple stepwise decrements in the magnetic field to reach the second level.
3. (original) The method of claim 2, wherein said stepwise decrements are separated by predetermined time periods.
4. (original) The method of claim 2, wherein the magnitude of each decrement is based on the magnetic coercivity of the magnetic media.
5. (original) The method of claim 2, wherein said first strength level is based on the magnetic coercivity of the magnetic media.

6. (original) The method of claim 2, wherein said second strength level is substantially zero.

7. (original) The method of claim 1, wherein said magnetic field is substantially perpendicular to the surface of the magnetic media.

8. (original) The method of claim 1, wherein:

step (a) further includes the steps of:

positioning an electromagnet proximate the magnetic media; and

providing electrical power to the electromagnet to generate said magnetic

5 field at said first level; and

step (b) further includes the steps of gradually reducing the electrical power to the electromagnet to reduce the magnetic field to said second level.

9. (original) A method of demagnetizing a magnetic data disk for recording data in a disk drive, comprising the steps of:

(a) placing the magnetic data disk in a magnetic field at a first strength level;

and

5 (b) gradually reducing the magnetic field to a second strength level to essentially eliminate net magnetization in the magnetic media.

10. (original) The method of claim 9, wherein:

the data disk includes opposing surfaces having magnetic medium thereon;

step (a) further includes the steps of:

placing an electromagnet proximate each surface of the data disk, such
5 that at least a portion of each surface of the data disk is between the electromagnets;
providing electrical power to the electromagnets to generate said magnetic
field at said first level; and
rotating the data disk in relation to the electromagnets such that the
magnetic field is substantially perpendicular to said surfaces of the data disk.

11. (original) The method of claim 9, wherein:

step (b) further includes the steps of reducing the magnetic field by multiple
stepwise decrements in the magnetic field to reach the second level.

12. (original) The method of claim 11, wherein said stepwise decrements are
separated by predetermined time periods.

13. (original) The method of claim 12, wherein the duration of each time period is
based on the speed of rotation of the data disk.

14. (original) The method of claim 12, wherein the duration of each time period is
at least longer than duration of a revolution of the data disk.

15. (original) The method of claim 11, wherein the magnitude of each decrement
is based on the magnetic coercivity of the magnetic media.

16. (original) The method of claim 10, wherein said magnetic field is substantially perpendicular to the surface of the magnetic media.

17. (original) The method of claim 10, wherein step (a) further includes the steps of moving the electromagnets essentially radially in relation to the rotating data disk to expose recording area on the disk surfaces to said magnetic field.

18. (original) An apparatus for demagnetizing magnetic media for recording data in a data storage device, comprising:

an electromagnet which generates a magnetic field when provided with electrical power;

5 a first support for positioning the magnetic media proximate the electromagnet such the magnetic field overlaps at least a portion of the magnetic media; and

a controller for selectively providing electrical power to the electromagnet to generate magnetic fields at different strength levels, wherein the controller is
10 configured to gradually reduce electrical power to the electromagnet from a first power level to a second power level, to reduce the magnetic field from a first strength level to a second strength level, respectively, to essentially eliminate net magnetization in the magnetic media.

19. (original) The apparatus of claim 18, wherein:
- the magnetic media comprises a magnetic data disk having opposing surfaces for recording data thereon;
- the electromagnet is positioned proximate a surface of the data disk;
- the apparatus further comprises a motor for rotating the data disk in relation to the electromagnet such that the magnetic field is substantially perpendicular to said surfaces of the data disk.
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20. (original) The apparatus of claim 18, wherein the controller is further configured to reduce the magnetic field by multiple stepwise decrements in the magnetic field to reach the second strength level.
21. (original) The apparatus of claim 20, wherein said stepwise decrements are separated by predetermined time periods.
22. (original) The apparatus of claim 21, wherein the duration of each time period is at least longer than duration of a revolution of the data disk.
23. (original) The apparatus of claim 20, wherein the magnitude of each decrement is based on the magnetic coercivity of the magnetic media.
24. (original) The apparatus of claim 18, wherein said magnetic field is substantially perpendicular to the surface of the magnetic media.

25. (original) The apparatus of claim 19 further comprising:
a second support for moving the electromagnet essentially radially in
relation to the rotating data disk to expose recording area on the disk surfaces to said
magnetic field.

26-46. (cancelled)